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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,387	10/17/2005	Agnes Dutron	VANM262.001APC	8653

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EXAMINER	
BADR, HAMID R	

ART UNIT	PAPER NUMBER
1781	

NOTIFICATION DATE	DELIVERY MODE
06/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/527,387	DUTRON ET AL.	
	Examiner	Art Unit	
	HAMID R. BADR	1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,7-12,16-18,20 and 23-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,7-12,16-18,20 and 23-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' amendment filed 4/01/2010 is acknowledged.

2. Claims 1, 2, 4, 7-12, 16-18, 20 and 23-28 are being considered on the merits.

Claim Objections

Claims 26 and 27 are objected to for "35oC". It is supposed to be 35ºC. Correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 4, 7-12, 16-18, 20 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gil et al. (1999, Keeping qualities of white pan bread upon storage: effect of selected enzymes on bread firmness and elasticity; hereinafter R1) in view of Collins et al. (2002, A novel family 8, functional and physicochemical characterization; hereinafter R2), Gerday et al. (2000, Cold-adapted enzymes: from fundamentals to biotechnology, hereinafter R3) and Fuglsang et al. (WO 02/19828; hereinafter R4)

3. R1 investigates the incorporation of endo-1,4-xylanase together with amylase, maltogenic amylase and lipase into a bread dough comprising all other bread ingredients. (page 395, col. 2, materials and methods)

4. R1 discloses that addition of xylanase to the bread dough causes an increase in loaf volume. (page 394, col. 2, last paragraph)

5. R1 is silent regarding the xylanase from *Pseudoalteromonas haloplanktis*.

6. R2 discloses xylanase enzyme belonging to family 8. The xylanase disclosed hydrolyses xylan to xylotriose and xyloteraose and is most active on long chain xylo-oligosaccharides. (Abstract).

7. The xylanase disclosed by R2, hydrolyzes with inversion of configuration. The source of the enzyme is *Pseudoalteromonas haloplanktis* (Abstract).

8. R2 characterizes the xylanase from this organism as having a molecular mass of about 46000 Daltons, an isoelectric point of about 9.5. an optimum pH for activity between about 5.3-8 and an optimum temperature of 35C (R2, Table 1) as presently claimed.

9. While R1 discloses the use of xylanase in the baking industry and R2 discloses other sources and types of xylanases, R1 or R2 does not set forth the motivation for using a psychrophilic xylanase in baking processes.

10. R3 discloses that "in baking processes, enzymes such as amylases, proteases, and xylanases can be used to reduce the dough fermentation time, improve the properties of the dough and the crumb, in addition to the retention of aromas and moisture levels. These enzymes act directly on starch, gluten and hemicelluloses to palliate the low level of intrinsic enzyme activities in the flour. The use of psychrophilic enzymes [i.e. the presently claimed xylanase] can be advantageous not only for their high specific activity, thereby reducing the amount of enzyme needed, but also for their

easy inactivation. " (page 106, second column, lines 4-15). Then in light of this motivation for using psychrophilic enzymes, including xylanase, screening the strains for such enzymes , purification of the enzyme and application of the enzyme to baking practices would have been obvious to those of skill in the art.

11. Despite the fact that applicants have provided a specific xylanase belonging to family 8 from the strain disclosed and claimed, this does not provide a patentable distinction over those xylanases disclosed by R2 (identical xylanase) as also having endo-xylanase activity with the same type of reaction on xylans and hemicelluloses, and the xylanases disclosed by R1 resulting in an increase in loaf volume, except for the optimum temperature for activity. Absent any clear and convincing evidence and/or arguments to the contrary, alternatively, given the specific teachings of R1 and R2 and R3; one would have been motivated to routinely screen out the identified xylanases from other sources and utilize such xylanases within the known methods of R1 for the same purpose of increasing the loaf volume as presently claimed.

12. R1, R2 and R3 are silent regarding compositions comprising one or more enzymes.

13. R4 discloses a composition comprising one or more enzymes and also discloses a method for improving one or more properties of a dough, also a method for preparing a baked product and to a dough and/or a baked product produced thereby. (Abstract)

14. R4 discloses the incorporation of carbohydrases including xylanases, oxidoreductase, amylases, proteases, lipases to the composition for baking purposes (page 10, lines 1-37 and page 11, lines 1-37). It is noted that α-amylase is a fungal

amylase from *Aspergillus oryzae*. To support this position, the applicant is referred to US patent number 6,110, 508 for the details of fungal amylase in baking (Col. 5, line 64 to col. 6, line 7).

15. R4 discloses the role of amylases to standardize the flour from the view point of amylolitic activity. Amylases and pentosanases generally provide sugar for the yeast fermentation, improve the bread volume, retard retrogradation (maintain crumb softness) and decrease the staling rate and stickiness that results from pentosan gums (page 12, lines 5-11).

16. R4 discloses that fungal α-amylases may be used to improve the bread volume and to provide a good and uniform structure of the bread crumb. (page 12, lines 22-24).

17. R4 discloses that enzyme preparations containing a number of pentosanase and hemi-cellulase activities can improve the handling and stability of the dough, improve the freshness, the crumb structure and the volume of the bread. (page 12, lines 33-36).

18. R4 teaches combining α-amylase and hemicellulase in a dough composition. In a particular embodiment the hemicellulase is a pentosanase such as xylanase. (page 13, lines 6-10). The xylanase is preferably of microbial origin e.g. derived from bacteria or fungi.

19. R4 gives an example where an encapsulated xylanase is used in baking. Other ingredients include water, flour, yeast, sugar, salt, ascorbic acid. The encapsulated enzyme was dispersed in water. The ingredients are combined and the dough is mixed (page 26, Example 3 to page 27 line 2). Other ingredients, including gluten, may also be added to the dough (page 22, lines 24-37).

20. R4 discloses the stabilizing or protective agents that can be used with enzymes including organic acids, inorganic salts, sugars etc. (page 21, line 31—page 22, line 7)

Response to Arguments

Applicants' arguments have been thoroughly reviewed. These arguments are not persuasive for the following reasons.

1. Applicants argue that as noted at page 25 (Table 6), the amount of xylanase from P. haloplankis able to prevent a given increase in bread volume was unexpectedly much lower than the amount of xylanases from B. subtilis and B. halodurans. These unexpected properties are neither disclosed nor suggested by any of the cited references and could not have been predicted by one having ordinary skill in the art.

a. In light of the new ground(s) of rejection and specifically in view of the disclosures by R3 (paragraph 10 above), Applicants' argument is moot.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R. Badr
Examiner
Art Unit 1781

/Keith D. Hendricks/
Supervisory Patent Examiner, Art Unit 1781